

WHAT IS CLAIMED:

- 1 1. An implant adapted to be placed between spinous processes
2 comprising:
3 a body that includes a shaft;
4 a spacer rotatably mounted on the shaft; and
5 a tissue expander extending from the shaft;
6 wherein the tissue expander is at least in part radiolucent.
- 1 2. The implant of claim 1 wherein the tissue expander is selected from
2 the group consisting of polyetheretherketone, polyetherketoneketone,
3 polyaryletheretherketone, polyetherketone, polyetherketoneetherketoneketone,
4 and polyetheretherketoneketone.
- 1 3. The implant of claim 1 wherein the spacer has a cross-sectional
2 shape selected from the group consisting of elliptical-shaped, cylindrical-shaped,
3 ovoid-shaped, oval-shaped, track-shaped, and rectangular-shaped with curved
4 ends.
- 1 4. The implant of claim 1 wherein the spacer has a dimension
2 selected from the group consisting of 6mm, 8mm, 10m, 12mm, and 14mm.
- 1 5. The implant of claim 1 wherein the spacer has an off-center bore
2 that receives the shaft so that the spacer can rotate about the shaft.
- 1 6. The implant of claim 1 wherein the tissue expander has a generally
2 increasing cross-section from an end location to a location adjacent to the
3 spacer.
- 1 7. The implant of claim 1 wherein the body includes a first wing
2 extending from a location on the shaft on an opposite side of the spacer from
3 which the tissue expander extends.

1 8. The implant of claim 1 wherein the shaft includes an attachment to
2 which the tissue expander is affixed.

1 9. The implant of claim 8 wherein the attachment includes a device for
2 receiving a wing.

1 10. The implant of claim 1 wherein the body includes a first wing
2 extending from a location on the shaft on an opposite side of the spacer from
3 which the tissue expander extends.

1 11. The implant of claim 10 wherein the body and the first wing are
2 radiopaque such that under x-ray the implant resembles a T-shape.

1 12. The implant of claim 1 wherein the spacer is at least in part
2 radiolucent.

1 13. The implant of claim 12 wherein at least one of the spacer and the
2 tissues expander are selected from the group consisting of polyetheretherketone,
3 polyetherketoneketone, polyaryletheretherketone, polyetherketone,
4 polyetherketoneetherketoneketone, and polyetheretherketoneketone.

1 14. The implant of claim 1 further including:
2 a first wing located at one end of the shaft and a second wing
3 located adjacent to the tissue expander such that the spacer is located
4 between the first and the second wings,
5 wherein the body, the shaft, and the first and second wings are
6 radiopaque and the tissue expander and spacer are radiolucent such that
7 under imaging the implant resembles an H-shape.

1 15. The implant of claim 1 wherein the shaft includes an attachment to
2 which the tissue expander is molded.

1 16. The implant of claim 15 wherein the attachment includes a device
2 for receiving a wing.

1 17. The implant of claim 1 wherein the spacer includes:
2 an inner spacer that is rotatably mounted about the shaft; and
3 an outer spacer that is movably mounted on the inner spacer.

1 18. The implant of claim 17 wherein:
2 the inner spacer has one of flattened or slightly radiused upper and
3 lower surfaces and rounded ends; and
4 the outer spacer has one of flattened or slightly radiused upper and
5 lower surfaces and rounded ends.

1 19. An implant adapted to be placed between spinous processes
2 comprising:
3 a body that includes a shaft; and
4 a spacer rotatably mounted on the shaft;
5 a tissue expander extending from the shaft;
6 wherein the tissue expander is at least in part radiolucent, and
7 wherein the spacer is at least in part radiolucent.

1 20. The implant of claim 19 including a wing located adjacent to the
2 spacer.

1 21. The implant of claim 19 wherein at least one of the spacer and the
2 tissues expander are selected from the group consisting of polyetheretherketone,
3 polyetherketoneketone, polyaryletheretherketone, polyetherketone,
4 polyetherketoneetherketoneketone, and polyetheretherketoneketone.

1 22. The implant of claim 19 wherein the tissue expander is selected
2 from the group consisting of polyetheretherketone, polyetherketoneketone,

3 polyaryletheretherketone, polyetherketone, polyetherketoneetherketoneketone,
4 and polyetheretherketoneketone.

1 23. The implant of claim 19 wherein the tissue expander has a
2 generally increasing cross-section from a distal end to a location adjacent to the
3 spacer.

1 24. The implant of claim 19 wherein the implant has a first wing
2 wherein the body and the first wing are radiopaque and the tissue expander and
3 the spacer are radiolucent such that under imaging the implant resembles a T-
4 shape.

1 25. The implant of claim 19 further including:
2 a first wing located at one end of the shaft and a second wing
3 located adjacent to the tissue expander such that the spacer is located
4 between the first and the second wings,
5 wherein the body, the shaft, and the first and second wings are
6 radiopaque and the tissue expander and spacer are radiolucent such that
7 under imaging the implant resembles an H-shape.

1 26. The implant of claim 19 wherein the spacer has a cross-sectional
2 shape selected from the group consisting of elliptical-shaped, cylindrical-shaped,
3 ovoid-shaped, oval-shaped, track-shaped, and rectangular-shaped with curved
4 ends.

1 27. The implant of claim 19 wherein the spacer has a dimension
2 selected from the group consisting of 6mm, 8mm, 10m, 12mm, and 14mm.

1 28. The implant of claim 19 wherein the spacer has an off-center bore
2 that receives the shaft so that the spacer can rotate about the shaft.

1 29. The implant of claim 19 wherein the spacer includes:
2 an inner spacer that is rotatably mounted about the shaft; and

3 an outer spacer that is movably mounted on the inner spacer.

1 30. The implant of claim 27 wherein:
2 the inner spacer has one of flattened or slightly radiused upper and
3 lower surfaces and rounded ends; and
4 the outer spacer has one of flattened or slightly radiused upper and
5 lower surfaces and rounded ends.

1 31. The implant of claim 19 wherein the body includes a first wing
2 extending from a location on the shaft on an opposite side of the spacer from
3 which the tissue expander extends.

1 32. The implant of claim 31 wherein the body and the first wing are
2 radiopaque and the tissue expander and spacer are radiolucent such that under
3 imaging the implant resembles a T-shape.

1 33. The implant of claim 19 wherein the shaft includes an attachment to
2 which the tissue expander is affixed.

1 34. The implant of claim 33 wherein the attachment includes a device
2 that can receive a wing.

1 35. The implant of claim 19 wherein the shaft includes an attachment to
2 which the tissue expander is molded.

1 36. The implant or claim 35 wherein the attachment includes a device
2 that can receive a wing.

1 37. An implant adapted to be placed between spinous processes
2 comprising:
3 a body including a shaft;
4 a spacer rotatably mounted on the shaft; and
5 a tissue expander extending from the shaft;

6 wherein the tissue expander is at least in part selected from the
7 group consisting of polyetheretherketone, polyetherketoneketone, and
8 polyaryletheretherketone; and

9 wherein the spacer is at least in part selected from the group
10 consisting of polyetheretherketone, polyetherketoneketone, and
11 polyaryletheretherketone.

1 38. The implant of claim 37 further including:
2 a first wing located at one end of the shaft and a second wing
3 located adjacent to the tissue expander such that the spacer is located
4 between the first and the second wings,
5 wherein the body, the shaft, and the first and second wings are
6 radiopaque such that under imaging the implant resembles an H-shape.

1 39. The implant of claim 37 wherein the shaft includes an attachment to
2 which the tissue expander is molded.

1 40. The implant of claim 37 wherein the spacer has a cross-sectional
2 shape selected from the group consisting of elliptical-shaped, cylindrical-shaped,
3 ovoid-shaped, oval-shaped, track-shaped, and rectangular-shaped with curved
4 ends.

1 41. The implant of claim 37 wherein the spacer has a dimension
2 selected from the group consisting of 6mm, 8mm, 10m, 12mm, and 14mm.

1 42. The implant of claim 37 wherein the spacer has an off-center bore
2 that receives the shaft so that the spacer can rotate about the shaft.

1 43. The implant of claim 37 wherein the shaft includes an attachment to
2 which the tissue expander is affixed.

1 44. The implant of claim 43 wherein the attachment includes a device
2 for receiving a wing.

- 1 45. The implant of claim 37 wherein the spacer includes:
2 an inner spacer that is rotatably mounted about the shaft; and
3 an outer spacer that is movably mounted on the inner spacer.
- 1 46. The implant of claim 45 wherein:
2 the inner spacer has one of flattened or slightly radiused upper and
3 lower surfaces and rounded ends; and
4 the outer spacer has one of flattened or slightly radiused upper and
5 lower surfaces and rounded ends.
- 1 47. An implant adapted to be placed between spinous processes
2 comprising:
3 a body includes a shaft;
4 a spacer rotatably mounted on the shaft;
5 a tissue expander extending from the shaft; and
6 wherein the tissue expander is at least in part selected from the
7 group consisting of polyetheretherketone, polyetherketoneketone,
8 polyaryletheretherketone, polyetherketone,
9 polyetherketoneetherketoneketone, and polyetheretherketoneketone.
- 1 48. The implant of claim 47 wherein the spacer is at least in part
2 selected from the group consisting of polyetheretherketone,
3 polyetherketoneketone, polyaryletheretherketone, polyetherketone,
4 polyetherketoneetherketoneketone, and polyetheretherketoneketone.
- 1 49. The implant of claim 37 wherein the body includes a first wing
2 extending from a location on the shaft on an opposite side of the spacer from
3 which the tissue expander extends.
- 1 50. The implant of claim 47 wherein the tissue expander has a
2 generally increasing cross-section from a distal end to a location adjacent to the
3 spacer.

1 51. The implant of claim 49 wherein the body and the first wing are
2 radiopaque such that under imaging the implant resembles a T-shape.

1 52. The implant of claim 48 further including:
2 a first wing located at one end of the shaft and a second wing
3 located adjacent to the tissue expander such that the spacer is located
4 between the first and the second wings,
5 wherein the body, the shaft, and the first and second wings are
6 radiopaque such that under imaging the implant resembles an H-shape.

1 53. The implant of claim 47 wherein the shaft includes an attachment to
2 which the tissue expander is affixed.

1 54. The implant of claim 47 wherein the spacer has a dimension
2 selected from the group consisting of 6mm, 8mm, 10m, 12mm, and 14mm.

1 55. The implant of claim 47 wherein the spacer has a cross-sectional
2 shape selected from the group consisting of elliptical-shaped, cylindrical-shaped,
3 ovoid-shaped, oval-shaped, track-shaped, and rectangular-shaped with curved
4 ends.

1 56. The implant of claim 47 wherein the spacer has an off-center bore
2 that receives the shaft so that the spacer can rotate about the shaft.

1 57. The implant of claim 47 wherein the shaft includes an attachment to
2 which the tissue expander is molded.

1 58. The implant of claim 57 wherein the attachment includes a device
2 for receiving a wing.

1 59. The implant or claim 58 wherein the attachment includes a device
2 for receiving a wing.

1 60. The implant of claim 47 wherein the spacer includes:
2 an inner spacer that is rotatably mounted about the shaft; and
3 an outer spacer that is movably mounted on the inner spacer.

1 61. The implant of claim 60 wherein:
2 the inner spacer has one of flattened or slightly radiused upper and
3 lower surfaces and rounded ends; and
4 the outer spacer has one of flattened or slightly radiused upper and
5 lower surfaces and rounded ends.

1 62. An implant adapted to be placed between spinous processes
2 comprising:
3 a body having a shaft extending therefrom;
4 a spacer rotatably mounted on the shaft; and
5 a tissue expander extending from the shaft,
6 wherein the body and the shaft are radiopaque, and further wherein
7 the spacer and the tissue expander are radiolucent.

1 63. The implant of claim 62 wherein the spacer and tissue expander
2 are selected from the group consisting of polyetheretherketone and
3 polyetherketoneketone.

1 64. The implant of claim 62 wherein the spacer is comprised of:
2 an inner spacer that is rotatably mounted about the shaft; and
3 an outer spacer that is movably mounted relative to the inner
4 spacer.

1 65. The implant of claim 62 wherein:
2 the inner spacer has one of a flattened or a slightly radiused upper
3 and lower surfaces and rounded first and second end; and
4 the outer spacer has one of a flattened or a slightly radiused upper
5 and lower surfaces and rounded first and second ends.

1 66. The implant of claim 64 wherein the inner spacer and the outer
2 spacer are selected from the group consisting of polyetheretherketone,
3 polyetherketoneketone, and polyaryletheretherketone.

1 67. The implant of claim 62 further comprising a first and second wing,
2 wherein the wings are located at opposite ends of the spacer and wherein the
3 body, shaft and wings are a radiopaque "H" on imaging film.

1 68. A method of locating an implant relative to spinous processes of
2 vertebrae comprising the steps of:

3 implanting an implant that has first and second wings connected by a shaft
4 that are radiopaque and with a spacer located between the first and second
5 wings and a tissue expander extending from the shaft that are radiolucent;

6 locating the implant either during the implantation step or after the
7 implantation step using an imaging technique which identifies the implant by an
8 "H" pattern.

1 69. The method of locating the implant of claim 68 wherein the "H"
2 pattern shows the first and second wings being substantially parallel and rail-like
3 and the shaft being perpendicular to the first and second wings.

1 70. A method of locating an implant relative to spinous processes of
2 vertebrae comprising the steps of:

3 implanting an implant that has a first wing connected to a shaft that are
4 radiopaque and with a spacer located adjacent the first wing and a tissue
5 expander extending from the shaft that are radiolucent;

6 locating the implant either during the implantation step or after the
7 implantation step using an imaging technique which identifies the implant by an
8 "T" pattern.

1

1 71. The method of locating the implant of claim 68 wherein the "T"
2 pattern shows the first and wing being rail-like and the shaft being perpendicular
3 to the first wing.